Cotton/Soybean Insect Newsletter

Volume 16, Issue #9 Edisto Research & Education Center in Blackville, SC 25 June 2021

Pest Patrol Alerts

The information contained herein each issue is available via text alerts that direct users to online recordings. I will update the short message often for at least as long as the newsletter runs. After a new message is posted, a text message is sent to alert users that I have recorded a new update. Users can subscribe for text message alerts for my updates in two easy steps. Step one: register by texting **pestpat7** to 97063. Step two: reply to the confirmation text you receive by texting the letter "y" to complete your registration. Pest Patrol Alerts are sponsored by Syngenta.

Updates on Twitter

When noteworthy events happen the in the field, I will be sending them out quickly via Twitter. If you want to follow those quick updates, follow me at **@bugdocisin** on Twitter.

News from Around the State

I have spoken with a few county agents, consultants, and industry reps this week, and they had few concerns regarding insects in cotton or soybeans at this point. One grower did suffer significant injury from thrips on cotton that he thought would be protected by the seed treatment, but it was stunted severely, and part of the crop had to be destroyed and replanted to soybeans. They are investigating to see if it was just the storage rate of imidacloprid and not the full insect-control rate for the seed treatment. There might have been a miscommunication on at-plant protection for thrips, or thrips were just numerous and inundated the cotton with a full seed treatment rate. Grasshoppers remain abundant, particularly in soybeans, and populations of aphids and plant bugs are starting to build in cotton.

Scouting Workshops and Field Days

We will offer several in-field, in-person workshops devoted to scouting for insect issues in cotton and soybeans in 2021. These scouting workshops will likely be on 28 July (Manning or Sumter area), 29 July (Cameron), and on 30 July (Edisto REC in Blackville), so please hold the date for your area, if you would like to attend. We will also have an in-person field day here at the Edisto REC on 2 September 2021, with at least row crops (cotton, soybeans, peanuts, corn, grain sorghum, etc.) covered. Stay tuned for details on those events.

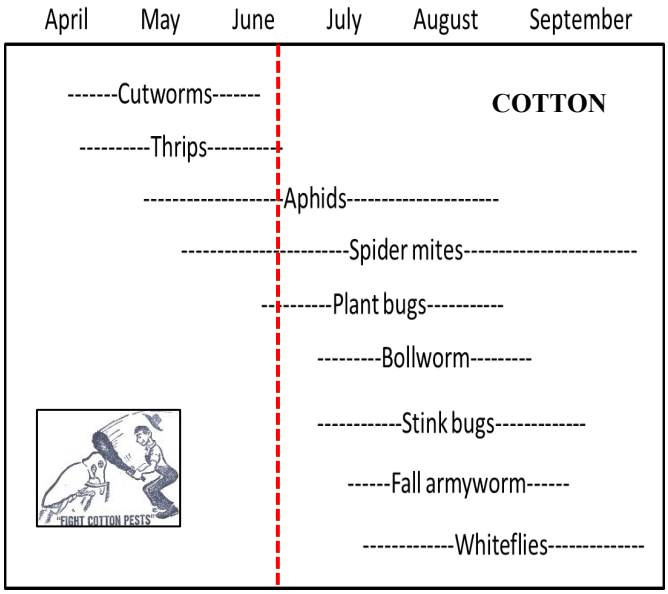
Cotton Situation

As of 20 June 2021, the USDA NASS South Carolina Statistical Office estimated that about 98% of the crop has been planted, compared with 95% at this time last week, 93% at this time last year, and 97% for the 5-

year average. About 22% of the crop is squaring, compared with 10% last week, 19% at this time last year, and 23% for the 5-year average. The conditions of the crop were 13% excellent, 65% good, 17% fair, 3% poor, and 2% very poor. These are observed/perceived state-wide averages.

Cotton Insects

Notice where we are on the timeline on the chart to the right. Our current position has us leaving thrips in the rear-view mirror and dealing with aphids, spider mites, and plant bugs head-on, historically, and that is where we are. As the crop starts to set squares, we will observe increasing populations of plant bugs, aphids, and spider mites. As you can see from the chart and might be aware of, spider mites are arthropods that can be an issue throughout most of the season. Severe infestations prior to bloom can result in significant yield loss, so be sure to scout for spider mites early to ascertain their status. Cotton can host low levels of spider mites and withstand some injury without yield loss. It is difficult to conduct research on treatment thresholds for spider mites, as uniform populations are difficult to establish in test plots. The best "product" for spider mites in cotton remains a good heavy rain. Our recommendations for spider mites read as:



Spider mite feeding causing stippling on upper leaf surface

Spider mites are occasionally a problem in South Carolina cotton. Infestations of mites are often flared by extremely hot and dry weather conditions. Applications of insecticides (e.g. acephate) for other pests can also flare infestations of spider mites by reducing the numbers of beneficial arthropods that prey upon them. Initial infestations occur from spider mites moving from wild host plants or other crops into border rows of cotton. White-to-yellow speckling on the upper surfaces of leaves (in proximity to petiole attachment) will be an

indication of a mite infestation. As mites continue to feed on the undersides of leaves, the upper surfaces will become reddened. Early recognition of these symptoms and spot treating infested areas will often prevent spider mites from spreading throughout a field.

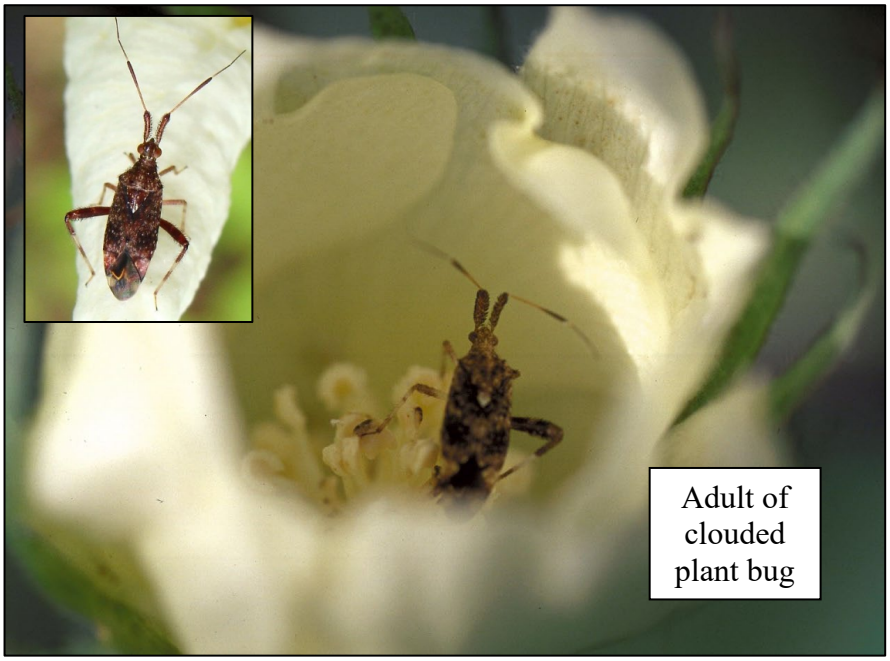
Two-spotted spider mites under and at base of cotton leaf

You will want to look under leaves to where the petiole connects to the leaf at the base to see spider mites. You can see spider mites and their (round) eggs with magnification. If treatment for spider mites is necessary, we have various options for chemical control (below); however, you need to be sure the stress is too much, and something must be done. In the past, I have seen fields covered up in spider mites where I intended to put out efficacy trials go from severely infested to hardly any spider mites detectable due to a heavy rain over the weekend. So, know the forecast before you treat.

SPIDER MITES

Product	Product/acre	Lb ai/acre	Acre/gal	REI	PHI	Comments
chlorpyrifos **(R)**		0.47-0.50		24 hr	14 d	Do not graze treated areas or use gin trash as feed
Lorsban 4 E or Nufos 4 E	16.0 oz	0.50	8			
Lorsban Advanced 3.755	16.0 oz	0.47	8			
bifenthrin **(R)**		0.06-0.1		12 hr	14 d	Higher rates required for control of mites
Discipline 2 EC or Brigade 2 EC or Fanfare 2 EC	3.8-6.4 oz		20-33.7			
propargite		0.82-1.69		7 d	50 d	Do not apply until plants are 12 in tall
Comite 6.55	16.0-32.0 oz		4-8			
Comite II 6	20.0-36.0 oz		3.55-6.4			
spiromesifen		0.125-0.25		12 hr	30 d	Per season 32 oz limit 16 oz limit
Oberon 2 SC	8.0-16.0 oz		8-16			
Oberon 4 SC	4.0-8.0 oz		16-32			
etoxazole		0.03-0.045		12 hr	28 d	Max of 1 application
Zeal 72.7 WSP	0.66-1.0 oz		-			
abamectin **(R)**		0.009-0.0188		12 hr	20 d	32 oz limit per season
Agri-Mek 0.15 EC or Zoro 0.15 EC	8.0-16.0 oz		8-16			
fepyroximate		0.05-0.1		12 hr	14 d	Limit of 2 pt per season
Portal 0.4	16.0-32.0 oz		4-8			

As mentioned last week, plant bugs will include several species, such as the tarnished plant bug (TPB), *Lygus lineolaris*, the clouded plant bug (CPB), *Neurocolpus nubilus*, and the cotton fleahopper (CFH), *Pseudatomoscelis seriatus*. The plant bug species of most concern in the Coastal Plain of SC is TPB. I have only observed CPB in the Upstate area of SC, and CFH is widely distributed but rarely an issue in cotton. Most of what we deal with regarding plant bugs is TPB. Plant bugs feed on pre-floral buds (squares), blooms, and small bolls. I provided photos of these species in the newsletter last week, but here are a few different photos. The first antennal segments of CPB are enlarged, and CPB are a little larger than TPB. Immatures of TPB are green and can look like fast-crawling aphids as small instars and have 5 black dots on the dorsum as late-stage nymphs. Adults of CFH are a pale color and smaller than adults of TPB. If the weed host cutleaf evening primose is prevalent, you can see more CFH in cotton. Recommendations for plant bug control with insecticide were included in the newsletter last week. Centric or Transform would be good choice initially, if cotton needs treatment for TPB.


Adult of clouded plant bug


Last instar (nymph) of tarnished plant bug

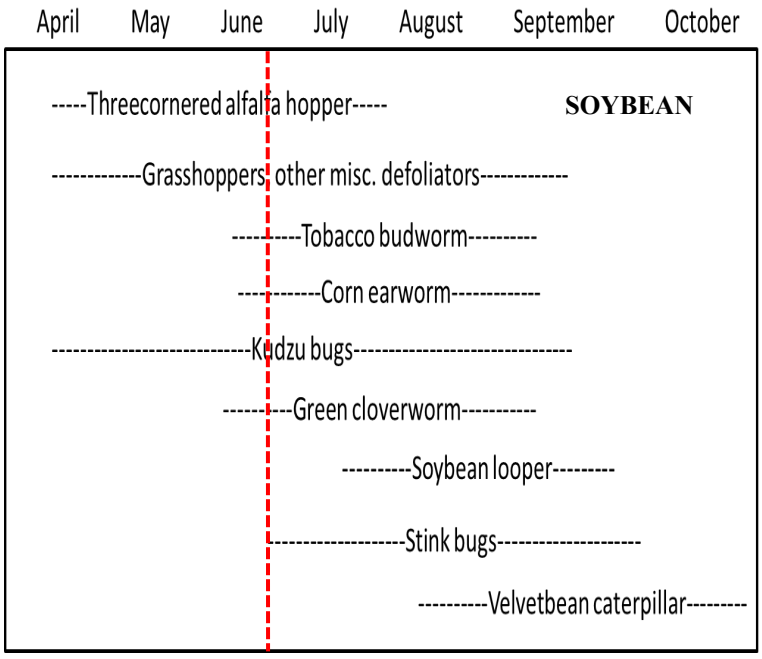

Adult of cotton fleahopper

Tank-mixing in 6 fl oz of Diamond can help control nymphs. In the mid-southern states, where TPB is the number one insect pest of cotton, they have routinely used this approach and rotated in the more broad-spectrum insecticides, such as Orthene and Bidrin, later, when they need "the big guns" for control.

Cotton aphids have been slow to build so far this season, but they are increasing now, and pockets are visible in the field. The species we have colonizing cotton is the cotton or melon aphid, *Aphis gossypii*. Historical and combined data sets on yield effects and cotton aphid indicate that aphids rarely cause significant yield loss. In other words, insecticide use for cotton aphid rarely pays for inself in protected yield. That being said, early and severe infestations of cotton aphid can result in stunted plants and yield loss, but it is rare. However, when additive stresses (heat, drought, insects, etc.) are on a cotton crop, killing aphids is often the only thing that can be done to relieve plants of some stress. Furthermore, lingering populations of aphids that have covered the plant with honeydew are often sprayed because it allows consultants to get into the field and observe other problems that can be difficult to see with inundative populations of aphids in the way. While this is understandable and sometimes perceived as the best strategy, most data support not spraying for aphids in cotton. As we learn more about Cotton Leafroll Dwarf Virus (CLRDV) that is transmitted by infected cotton aphids, this might change, but only time will tell. So far, CLRDV has not been an economic problem in cotton. As I mentioned last week, aphids are food for beneficial arthropods, allowing them to build up and provide control of other pests when the naturally occurring fungal organism *Neozygites fresenii* decimates populations of aphids and leaves predators hungry for other arthropods. Consider all of this before spraying insecticides for aphids in cotton.

Soybean Situation

As of 20 June 2021, the USDA NASS South Carolina Statistical Office estimated that about 93% of the crop has been planted, compared with 89% the previous week, 78% at this time last year, and 83% for the 5-year average. About 87% of the crop has emerged, compared with 82% the previous week, 63% at this time last year, and 68% for the 5-year average. The conditions of the crop were 11% excellent, 75% good, 9% fair, 3% poor, and 2% very poor. These are observed/perceived state-wide averages.

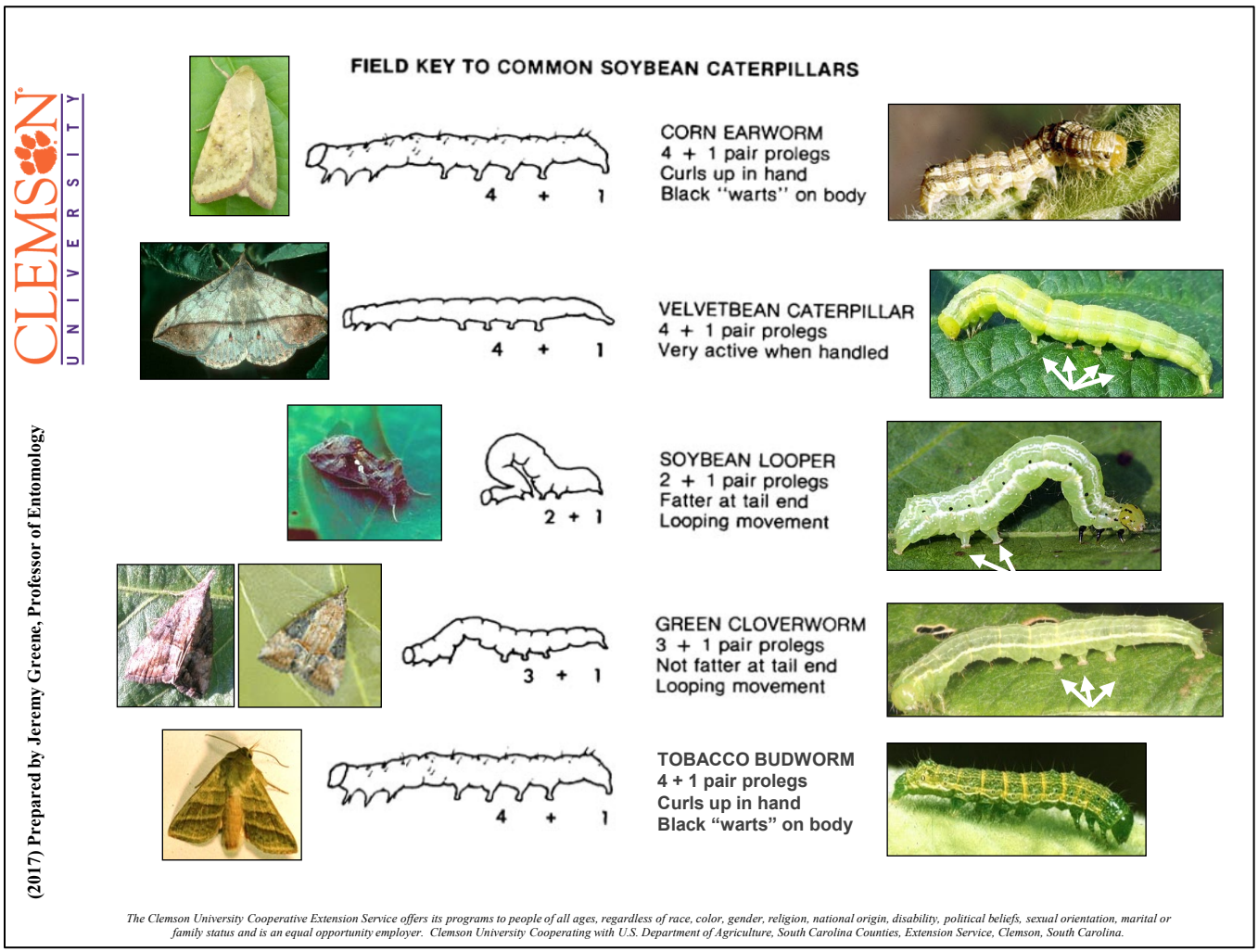


Soybean Insects

The message is getting repetitive in soybeans regarding insect issues…all is still good in

soybeans at this point. A few calls about grasshoppers are all I hear about right now regarding issues with insects in the crop. A repeat of last week – continue to monitor stands and loss of foliage to grasshoppers. We can stand considerable loss of foliage (at least 30%) before bloom without a loss of yield. If clear problems with grasshoppers are identified, use heavy rates of insecticides (a pyrethroid, acephate, or chlorpyrifos) for adults, and consider using Dimilin at 2 fl oz/acre where you have noticeable reproduction and many grasshopper nymphs (no wings) jumping around. The rains we recently received will result in hatchouts of grasshopper immatures that will likely cause another round of problems.

We are also moving into the part of the season when moth activity will start to pick up, and eggs will yield caterpillar pests on soybeans. So, I will start stressing the importance of being able to identify the adults flying around in fields. Here is a chart to study for moth and caterpillar identification.



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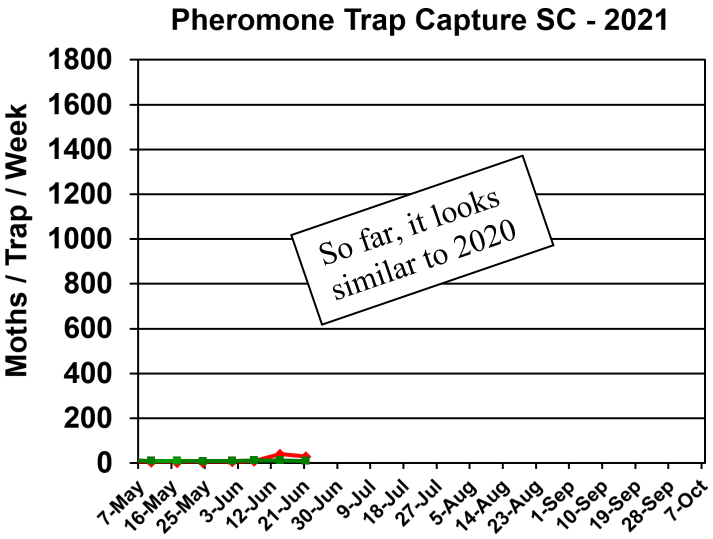
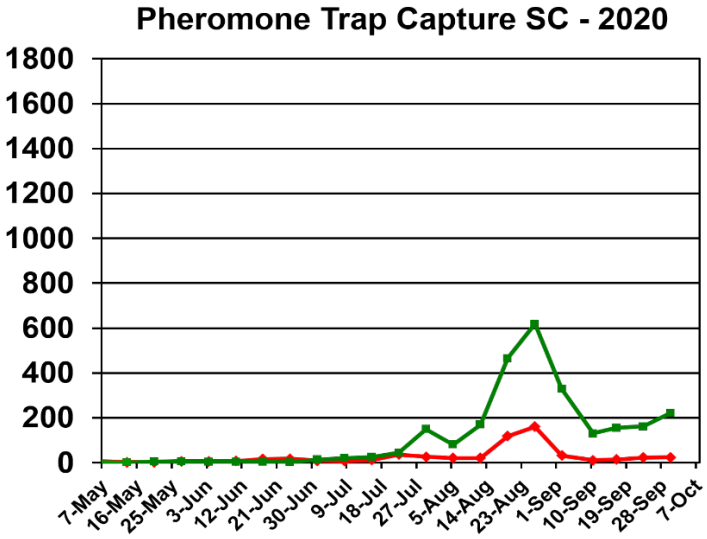
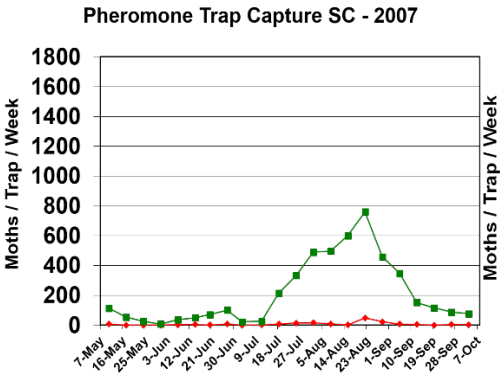
Bollworm & Tobacco Budworm

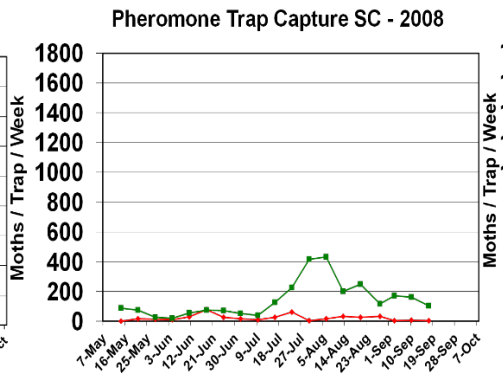
Captures of bollworm (BW) and tobacco budworm (TBW) moths in pheromone traps at EREC this season are shown below, as are the captures from 2007-2020 for reference. Tobacco budworm continues to be important for our soybean acres and for any acres of non-Bt cotton. I provide these data as a measure of moth presence and activity in our local area near my research plots. The numbers are not necessarily representative of the species throughout the state.

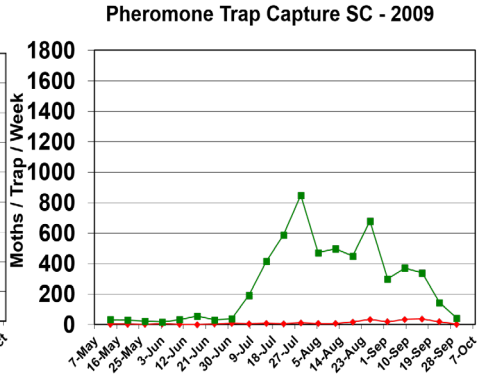




Trap data from 2007-2019 are shown below for reference to other years of trapping data from EREC:







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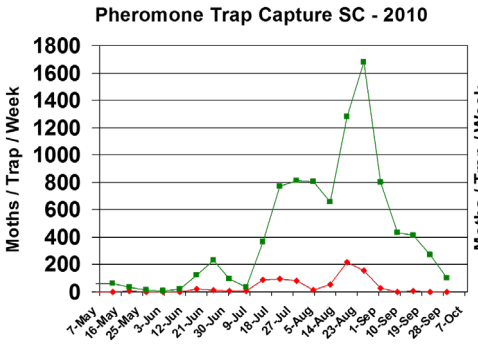
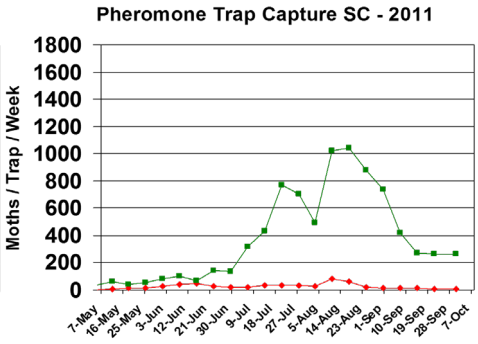
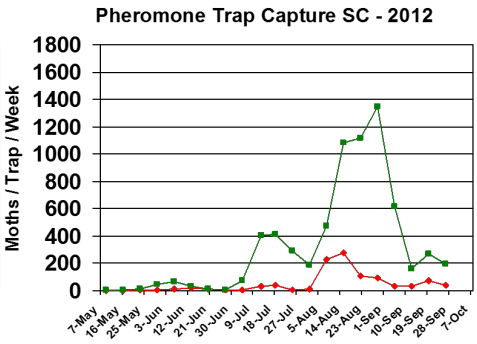
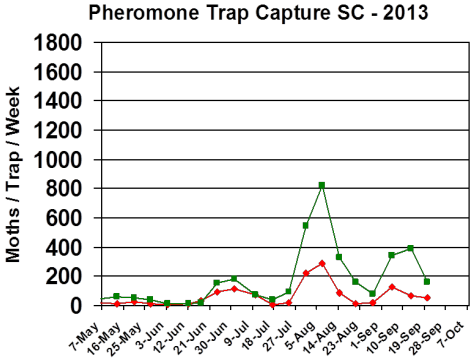
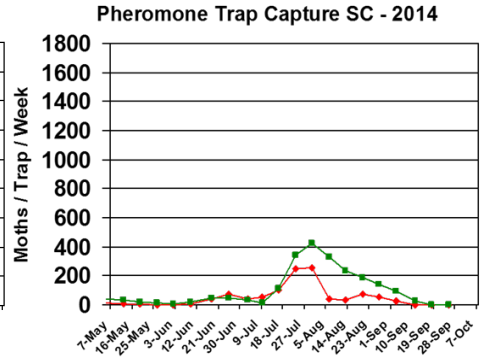
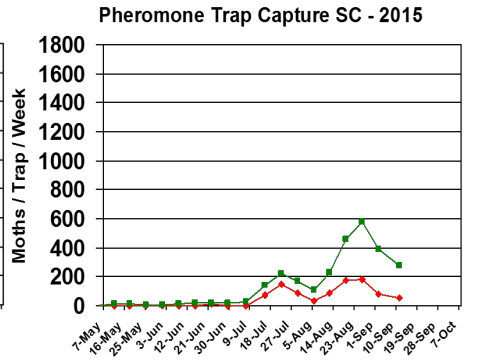


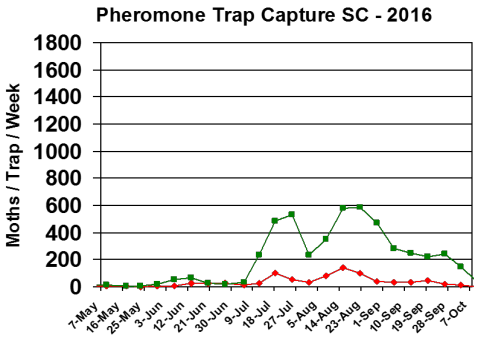


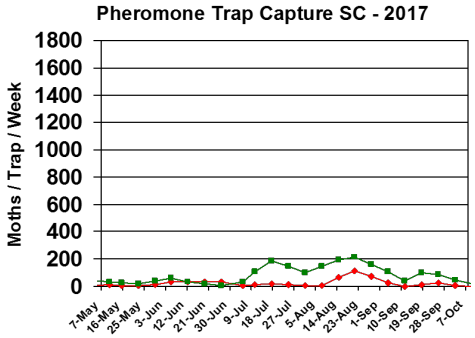


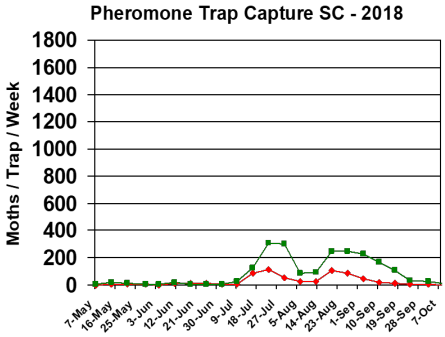


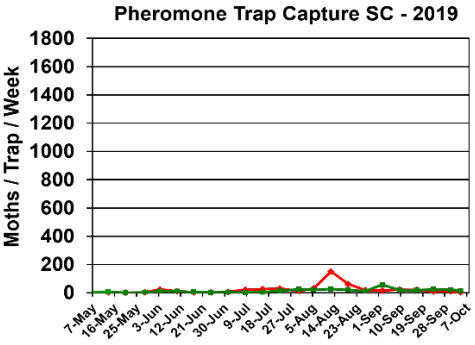








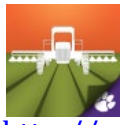




Pest Management Handbook – 2021

Insect control recommendations are available online in the 2021 South Carolina Pest Management Handbook at:
https://www.clemson.edu/extension/agronomy/pest%20management%20handbook.html

Free Mobile Apps: "Calibrate My Sprayer" and "Mix My Sprayer"



Download our free mobile apps called "Calibrate My Sprayer" and "Mix My Sprayer" that help check for proper calibration of spraying equipment and help you with mixing user-defined pesticides, respectively, in custom units (available in both iOS and Android formats):
http://www.clemson.edu/extension/mobile-apps/

Need More Information?

For more Clemson University Extension information: http://www.clemson.edu/extension/

For historical cotton/soybean insect newsletters:
https://www.clemson.edu/extension/agronomy/cotton1/newsletters.html

Sincerely,

Jeremy K. Greene, Ph.D.
Professor of Entomology

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